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CHECK LIST
OF
NORTH AMERICAN WATER-MITES

RODGER D. MITCHELL

FIELDIANA: ZOOLOGY
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RODGER D. MITCHELL

Department of Zoology, University of Vermont

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North American Water-Mites

INTRODUCTION

Fewer than fifty species of water-mites were known from North America in 1900. Now more than two hundred and seventy species are known, largely through the work of Dr. Ruth Marshall. During her forty years' study of the group Miss Marshall amassed a collection containing abundant material of nearly every species known from this continent. In addition to the type material of her own species, the Marshall Collection contains most of the Wolcott types, paratypes from Lavers, and a few types of species described from North America by Lundblad, Koenike, and Karl Viets. This collection was deposited in Chicago Natural History Museum in 1945. A listing of the types in the Marshall Collection was started and, as the work progressed, it was apparent that with a little expansion a full listing of the North American water-mites could be prepared. The species represented by type material in the Marshall Collection are indicated by the designation "[Marshall Collection]" following the citation. A detailed listing of the types is not possible at present for two reasons. Types of the first few species described by Miss Marshall were destroyed in a fire and subsequent neotype selections have not been published. In most of the descriptions, the type series was not clearly indicated and a formal designation of the holotype was not made. Further clarification of the type material should be undertaken through revisionary studies.

The synonymies in the check list represent, as far as is possible to ascertain, the views of Miss Marshall as expressed in her papers, and, in a few cases, in her notes. Subgenera were rarely indicated by her, hence they can be listed in only a few cases. Furthermore, most authors have defined the subgenera in the course of limited faunistic studies, with the result that general usage of subgenera is difficult. Also, the understanding of the Nearctic fauna is so limited that the use of subgenera is not particularly helpful in most cases. The subgenera of *Hydrachna* and *Arrenurus* are obvious exceptions. It is suggested (Lundblad, 1944) that intergradation between the subgenera *Truncaturus*, *Megaluracarus*, and *Micruracarus* of the

genus *Arrenurus* is a basis for suppressing the use of these categories. The definition of the subgenera is, in respect to the few marginal forms, clearly arbitrary. Regardless of the decision in this matter, it is obvious that each of the subgenera indicates a phyletic line and is of great practical value in breaking up a genus of tremendous size.

In a few cases there is uncertainty about the selection of generotypes, a question on which I do not feel qualified to pass judgment. Current usage by European workers has been followed in these cases. Viets (1949) gives a full discussion of the two major name changes affecting the species considered here. *Atractides* must be applied in place of *Megapus* and the species that have been included in *Atractides* must be referred to under the name *Torrenticola*. This unfortunate change calls for changing the family name Atractideidae to Torrenticolidae. The genus *Acercus* must now be referred to under the name *Tiphys*.

Families of water-mites have been defined entirely by European investigators. The system adopted today was outlined in the papers of Thor, but it has been modified and developed through the research of Viets and Lundblad. Lundblad's classification (1941b) has been followed here because it is the most recent complete listing of the genera. It differs only slightly from that of Karl Viets (1936).

The forty families of water-mites, although closely related, cannot be assigned to an inclusive taxonomic category. Many authors have chosen to cite Hydrachnellae or Hydracarina (Latinized names for water-mites) in the same fashion as a taxonomic category. Since there is general agreement that the group is an ecological and not a phyletic one, such a practice seems illogical and misleading. The various systems for grouping the water-mites with the prostigmatid mites suffer from the lack of any critical information on the internal and skeletal anatomy.

I am aware that much critical study is necessary to clarify the status of many of the groups listed below. Furthermore, many genera known to occur in North America are not yet recorded in the literature. Considering these matters, this check list is offered only as a summary of our published knowledge of the North American water-mites.

The preparation of this list has been greatly facilitated by the kind consideration and helpful criticism of Rupert L. Wenzel and Henry S. Dybas. I am indebted to David R. Cook for his help in reviewing and checking the list.

HISTORY

Before the latter part of the nineteenth century there were only a few publications on our water-mite fauna, all inadequate. The first usable paper, published by Koenike in 1895, gave identifications and descriptions of a surprisingly good collection of water-mites made by J. B. Tyrrell. Around the turn of the century Robert H. Wolcott published a few papers. His key to the genera of the world (1905) was later abridged and included in *Fresh-Water Biology* (1918). The classification suggested in this work is very much out of date due to the subsequent work of various European students.

Between the years 1903 and 1946 Ruth Marshall published forty-one papers. Most of these papers deal with the still-water fauna of the mid-western states. Marshall's descriptions and illustrations form a workable basis for the identification of our water-mites, but it is regrettable that the results of these studies have never been assembled in the form of larger monographs or revisions. Two other significant papers have been published: a revision of the genus *Hydrachna* by Lundblad (1934), and an article by Lavers (1945) on the *Arrenurus* of the state of Washington. Only a few brief descriptive papers on the North American water-mite fauna have appeared since 1900.

Baker and Wharton (1952) have presented a key to, and synopses of, the water-mite families of the world. There are a few inconsistencies in the presentation, because the key, translated from Karl Viets (1936), has not been modified to conform with the classification followed in the family synopses, which were taken from Vitzthum (1940-43).

The most recent publication in this country is that of Pennak (1953), whose key (apparently taken from Wolcott, 1918) is preceded by an account of the biology of water-mites that is remarkably well done, considering the limitations of space. Omissions make the key of little value to the specialist, but probably serve to make the account a comprehensible and reasonably accurate introduction for the non-specialist who deals chiefly with the common genera.

GENERAL WORKS

None of the keys published in this country (Wolcott, 1905 and 1918; Pennak, 1953) are sufficiently complete for advanced studies of water-mites. Because of the uniformity, at least in generic representation, of the Holarctic fauna the excellent monographs on

the European fauna (Viets, 1936; Motas, 1928; and Lundblad, 1927) are indispensable basic references for any advanced work on the North American water-mite fauna. The volumes published by the Ray Society (Soar and Williamson, 1925-29), though lacking in some critical detail, are frequently helpful in supplying general information.

One meets with considerable difficulty in working with the mites that occur in our streams. Most of the genera are little known and many are not Holarctic; therefore, there is no single work that can be used for identifying these forms.

Attention should be called to certain works as sources of special information. The remarkable morphological diversity of water-mites is clearly demonstrated in the work of Motas (1928). Since 1928, Motas and his associates have done a creditable job of describing the subterranean fauna of the Balkans. Most of the work is summarized by Szalay (1949), although Motas' continued researches have added more forms since that summary. In addition to the fine treatments on the European fauna mentioned earlier, there are two other important faunistic studies, Karl Viets' study of the water-mites of Sumatra, Java, and Bali (1935) and the work of Lundblad (1941-44) on the South American fauna, which is a magnificently illustrated monograph. The extensive work on the African fauna has been reviewed and listed by Karl Viets (1953).

Family HYDROVOLZIIDAE Thor

Hydrovolziidae Thor, 1905, Zool. Anz., 28: 509.

Genus *Hydrovolzia* Thor

Generotype: *Polyxo placophora* Monti.

Hydrovolzia Thor, 1905, op. cit., pp. 506-507.

gerhardi Mitchell, 1954, Chicago Acad. Sci. Nat. Hist. Misc., no. 134, pp. 3-6, figs. 1-3. [C.N.H.M. Collection]

placophora Monti, 1905, Rend. Ist. Lomb. Sci. Lett., (2), 38: 170-174, pl. 1, fig. 1, pl. 2, figs. 2-14.

Family HYDRACHNIDAE Leach

Hydrachnides Leach, 1815, Trans. Linn. Soc. London, 11: 399-400.

Genus *Hydrachna* Müller

Generotype: *Hydrachna cruenta* Müller.

Hydrachna Müller, 1776, Zool. Danicae Prodrömus, p. 188.

Subgenus *Hydrachna* s. str.

cruenta Müller, 1776, Zool. Danicae Prodrömus, p. 190.

americana Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 63, pl. 3, figs. 25-27. [Marshall Collection]

var. *diminuata* Lundblad, 1934, Ark. Zool., **28A**, (3), p. 10, figs. 4a-4d.

magniscutata Marshall, 1927, Trans. Amer. Micros. Soc., **46**: 271-272, pl. 7, figs. 8-11. [Marshall Collection]

var. *reducta* Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 13-14, figs. 6a-6e, pl. 1, fig. 8, pl. 2, fig. 16.

var. *separata* Lundblad, 1934, op. cit., p. 15, figs. 5e-5h, pl. 1, fig. 5, pl. 2, fig. 15.

Subgenus *Scutohydrachna* Viets

Generotype: *Hydrachna dorsoscutata* Viets, 1933, Zool. Anz., **103**: 162-164, figs. 1-3.

Scutohydrachna Viets, 1933, Zool. Anz., **103**: 162.

Chitohydrachna Habeeb, 1950, Natural. Canad., **77**: 116.

crenulata Marshall, 1930, Trans. Wis. Acad. Sci., **25**: 247, pl. 5, figs. 6-7. [Marshall Collection]

?ennishonensis Habeeb, 1950, Natural. Canad., **77**: 116-117, figs. 7-11. [C.N.H.M. Collection]

hutchinsoni Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 20-21, figs. 10a-10e.

rotunda Marshall, 1930, Trans. Wis. Acad. Sci., **25**: 246-247, pl. 5, figs. 4-5. [Marshall Collection]

Subgenus *Diplohydrachna* Thor

Generotype: *Acarus globosa* Geer, 1778, Mem. hist. ins., **7**: 146-147, pl. 9, figs. 11-12.

Diplohydrachna Thor, 1916, Rev. Ruisse Ent., **16**: 46-47.

conjecta Koenike, 1895, Rev. biol. nord. Fr., **7**: pp. 145-146, pl. 8, figs. 9-11.

microscutata Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 65, pl. 3, figs. 28-30. [Marshall Collection]

hungerfordi Lundblad, 1934, Ark. Zool., **28A**, (3), pp. 23-25, figs. 13a-13f, 18-19.

Subgenus *Tetrahydrachna* Lundblad

Generotype: *Hydrachna miliaria* Berlese.

Tetrahydrachna Lundblad, 1934, Ark. Zool., **28A**, (3), p. 30.

miliaria Berlese, 1888, Bull. Soc. Ent. Ital., **20**: 219.

bilunata Marshall, 1931, Trans. Wis. Acad. Sci., **26**: 314, pl. 8, figs. 26-27. [Marshall Collection]

Subgenus *Rhabdohydrachna* Viets

Generotype: *Hydrachna comosa* Koenike, 1896, Zool. Anz., **19**: 359-360.

Rhabdohydrachna Viets, 1931, op. cit., **93**: 184.

- canadensis** Marshall, 1929, (female only), Univ. Toronto Stud., Biol. Ser., no. 33, pp. 63-64, pl. 3, figs. 21, 22, 24. [Marshall Collection]
- geographica** Müller, 1776, Zool. Danicae Prodrum, p. 190 (Palearctic).
 form *americana* Lundblad, 1934, Ark. Zool., 28A, (3), pp. 30-32, figs. 16a-16e.
- hesperia** Lundblad, 1934, Ark. Zool., 28A, (3), pp. 38-41, figs. 21a-21d, pl. 2, fig. 13.
- marshallae** Lundblad, 1934, op. cit., pp. 34-35, 18a-18f. [Marshall Collection]
 canadensis Marshall, 1929, (male only), Univ. Toronto Stud., Biol. Ser., no. 33, pp. 63-64, pl. 3, figs. 20, 23. [Marshall Collection]
- stipata** Lundblad, 1934, Ark. Zool., 28A, (3), pp. 35-38, figs. 19a-19g, figs. 20a-20c, pl. 2, figs. 9-11.

Family LIMNOCHARIDAE Kramer

Limnocharidae Kramer, 1877, Arch. Naturg., 43, (Bd. 1), pp. 242-244.

Genus *Limnochares* Latreille

Generotype: *Acarus aquaticus* Linnaeus.

Limnochares Latreille, 1796, Précis des caractères des insectes, p. 181.

Subgenus *Limnochares* s. str.

aquatica Linnaeus, 1758, Syst. nat., p. 617.

Subgenus *Cyclothrix* Wolcott

Generotype: *Limnochares crinita* Koenike, 1899, Abh. Senckenb. naturf. Ges., 21: 313-318, pl. 21, figs. 23-29.

Cyclothrix Wolcott, 1905, Trans. Amer. Micros. Soc., 26: 185.

americana Lundblad, 1941, Zool. Anz., 133: 155.

natans Lavers, 1941, Univ. Wash. Pub., Biology, 12: 3-6, pl. 1, figs. 1-3.

 ?*acadiensis* Habeeb, 1950, Natural. Canad., 77: 114, 116, figs. 1-3.
 [C.N.H.M. Collection]

Family EYLAIIDAE Leach

Eylaides Leach, 1815, Trans. Linn. Soc. London, 11: 399.

Genus *Eylais* Latreille

Generotype: *Hydrachna extendens* Müller, 1776, Zool. Danicae Prodrum, p. 190.

Eylais Latreille, 1796, Précis des caractères des insectes, pp. 182-183.

abitibiensis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 60-62, pl. 1, figs. 1-4. [Marshall Collection]

extendens Müller, 1776, Zool. Danicae Prodrum, p. 190.

bakeri Marshall, 1946, Trans. Wis. Acad. Sci., 36: 357, pl. 4, figs. 37-38.
 [Marshall Collection]

desecta Koenike, 1897, Abh. naturw. Ver. Bremen, **14**: 288-289.

falcata Koenike, 1897, op. cit., p. 288.

gibberipons Viets, 1910, op. cit., **20**: 171-173, figs. 5-6.

hirsutipalpis Marshall, 1946, Trans. Wis. Acad. Sci., **36**: 357-358, pl. 4, figs. 42-43. [Marshall Collection]

infundibulifera Koenike, 1897, Abh. naturw. Ver. Bremen, **14**: 284-285.

marshallae Koenike, 1912, Trans. Royal Canad. Inst., **9**: 286-288, pl. 1, figs. 8-11, pl. 2, fig. 10.

rimosa Piersig, 1899, Zool. Anz., **22**: 65-66, fig. 6.

triangulifera Koenike, 1897, Abh. naturw. Ver. Bremen, **14**: 289-290.

infundibulata Lundblad, 1941, Zool. Anz., **133**: 155.

robusta Marshall, 1946, Trans. Wis. Acad. Sci., **36**: 358, pl. 4, figs. 44-46. [Marshall Collection]

Family PROTZIIDAE Viets

Protziidae Viets, 1926, Zool. Anz., **69**: 196.

Genus *Calonyx* Walter

Generotype: *Partnunia lauta* Walter, 1906, Zool. Anz., **30**: 571-572.

Calonyx Walter, 1907, op. cit., **31**: 298.

Protzia Marshall, 1931, Trans. Wis. Acad. Sci., **26**: 312-313.

Sporadoporus Wolcott, 1905, Trans. Amer. Micros. Soc., **26**: 191.

constans Marshall, 1943, op. cit., **62**: 323, pl. 4, figs. 30-34. [Marshall Collection]

ovata Marshall, 1931, Trans. Wis. Acad. Sci., **26**: 312-313, pl. 7, figs. 9-12. [Marshall Collection]

Genus *Partnuniella* Viets

Generotype: *Partnuniella thermalis* Viets.

Partnuniella Viets, 1938, Verhandl. Int. Verein. Limnol., **8**, (Tome 3), p. 214.

thermalis Viets, 1938, op. cit., pp. 215-219, figs. 1-5. [Marshall Collection]

var. *paucipora* Viets, 1938, op. cit., p. 219, figs. 6-7. [Marshall Collection]

Family CLATHROSPERCHONIDAE Lundblad

Clathrosperchonidae Lundblad, 1936, Zool. Anz., **115**: 30.

Genus *Clathrosperchon* Lundblad

Generotype: *Clathrosperchon crassipalpis* Lundblad, 1936, op. cit., p. 30.

Clathrosperchon Lundblad, 1936, op. cit., p. 30.

americanus Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 1, figs. 1-5.

Family **HYDRYPHANTIDAE** Thor*Hydryphantidae* Thor, 1900, *Nyt. mag. naturvid.*, **38**: 263.Genus **Hydryphantes** KochGenerotype: *Acarus ruber* Geer.*Hydryphantes* Koch, 1842, *Übers. Arachnidensystems*, **3**: 30.**multiporus** Marshall, 1930, *Trans. Wis. Acad. Sci.*, **25**: 247-248, pl. 5, figs. 1-3. [Marshall Collection]**ruber** Geer, 1776, *Mem. hist. ins.*, **7**: 141-146, pl. 9, figs. 3-9.*novatus* Viets, 1949, *Abh. naturw. Ver. Bremen*, **32**: 311.*novus* Viets, 1939, *Arch. Hydrobiol.*, **36**: 75.var. *mozleyi* Marshall, 1929, *Univ. Toronto Stud.*, *Biol. Ser.*, no. 33, pp. 68-69, pl. 2, figs. 12-13. [Marshall Collection]**tenuabilis** Marshall, 1926, *Univ. Iowa Stud. Nat. Hist.*, **11**: 33, pl. 2, fig. 9, pl. 3, figs. 16-18. [Marshall Collection]Genus **Thyas** KochGenerotype: *Thyas venusta* Koch, 1836, *Deutschl. Crust., Myr., Arachn.*, Heft 5, no. 18.*Thyas* Koch, 1836, *op. cit.***stolli** Koenike, 1895, *Abh. naturw. Ver. Bremen*, **13**: 194-196, pl. 2, figs. 29-32. [Marshall Collection]Genus **Marshallothyas** CookGenerotype: *Marshallothyas asopos* Cook, 1953, *Proc. Ent. Soc. Wash.*, **55**: 306, figs. 1-10.*Marshallothyas* Cook, 1953, *op. cit.*, p. 305.**asopos** Cook, 1953, *op. cit.*, p. 306, figs. 1-10. [C.N.H.M. Collection]Genus **Panisus** KoenikeGenerotype: *Panisus michaeli* Koenike, 1896, *Zool. Anz.*, **19**: 356-357.*Panisus* Koenike, 1896, *op. cit.*, p. 356.**cataphracta** Koenike, 1895, *Abh. naturw. Ver. Bremen*, **13**: 196-198, pl. 2, figs. 33-35.Genus **Lundbladia** VietsGenerotype: *Lundbladia feuerborni* Viets, 1929, *Zool. Anz.*, **86**: 50-52.*Lundbladia* Viets, 1929, *op. cit.*, pp. 49-50.**musculicola** Mitchell, 1953, *Amer. Midl. Nat.*, **49**: 162-165, 15 figs. [C.N.H.M. Collection]Genus **Panisopsis** VietsGenerotype: *Thyas vigilans* Piersig, 1896, *Zool. Anz.*, **19**: 441.*Panisopsis* Viets, 1926, *op. cit.*, **66**: 147.**pedunculata** Koenike, 1895, *Abh. naturw. Ver. Bremen*, **13**: 192-194, pl. 1, figs. 24-28. [Marshall Collection]

Family **THERMACARIDAE** Sokolow

Thermacaridae Sokolow, 1927, Zool. Anz., 73: 20.

Genus **Thermacarus** Sokolow

Generotype: *Thermacarus thermobius* Sokolow, op. cit., pp. 11-20, figs. 1-13.

Thermacarus Sokolow, 1927, op. cit., pp. 11-20.

nevadensis Marshall, 1928, Psyche, 35: 93-95, pl. 3, figs. 1-9. [Marshall Collection]

Family **HYDRODROMIDAE** Viets

Hydrodromidae Viets, 1936, Tierwelt Deutschlands, Teil 31-32, pp. 139-140.

Diplodontidae Lundblad, 1927, Zool. bidrag Uppsala, 11: 408.

Genus **Hydrodroma** Koch

Generotype: *Hydrachna despiciens* Müller.

Hydrodroma Koch, 1842, Übers. Arachnidensystems, 3: 32.

Diplodontus auct. (nec Dugés).

americanus Marshall, 1926, Univ. Iowa Stud. Nat. Hist., 11: 33, pl. 1, fig. 4, pl. 2, fig. 8, pl. 3, figs. 13-15. [Marshall Collection]

despiciens Müller, 1776, Zool. Danicae Prodromus, p. 190.

Family **PSEUDOHYDRYPHANTIDAE** Viets

Pseudohydrphantidae Viets, 1926, Zool. Anz., 69: 196.

Genus **Pseudohydrphantes** Viets

Generotype: *Pseudohydrphantes parvulus* Viets, 1907, Abh. naturw. Ver. - Bremen, 19: 142-145, figs. 1-4.

Pseudohydrphantes Viets, 1907, op. cit., p. 142.

latipalpus Marshall, 1924, Trans. Amer. Micros. Soc., 43: 245-246, pl. 14, figs. 44-45. [Marshall Collection]

orbicularis Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 67-68, pl. 4, figs. 36-38. [Marshall Collection]

Family **TEUTONIIDAE** Lundblad

Teutoniidae Lundblad, 1927, Zool. bidrag Uppsala, 11: 409-410.

Genus **Teutonia** Koenike

Generotype: *Hygrobates cometes* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 10, no. 23.

Teutonia Koenike, 1889, Zool. Anz., 12: 104.

lunata Marshall, 1924, Trans. Amer. Micros. Soc., 43: 245, pl. 14, figs. 48-50. [Marshall Collection]

Family SPERCHONIDAE Thor

Sperchonidae Thor, 1900, *Nyt. mag. naturvid.*, **38**: 264.

Genus *Sperchonopsis* Piersig

Generotype: *Sperchon verrucosus* Protz.

Sperchonopsis Piersig, 1897, *Sitzungs. naturf. Ges. Leipzig*, **22-23**: 52.

Pseudosperchon Marshall, 1933, *Trans. Amer. Micros. Soc.*, **52**: 37.

ovalis Marshall, 1929, *Univ. Toronto Stud., Biol. Ser.*, no. 33, pp. 66-67, pl. 4, figs. 31-33. [Marshall Collection]

verrucosa Protz, 1896, *Zool. Anz.*, **19**: 23-25, figs. 1-3.

Genus *Sperchon*¹ Kramer

Generotype: *Sperchon squamosus* Kramer, 1879, *Arch. Naturg.*, **45**, (Bd. 1), pp. 2-5, pl. 1, figs. 1a-1d.

Sperchon Kramer, 1877, *op. cit.*, **43**, (Bd. 1), p. 240.

crassipalpis Marshall, 1933, *Trans. Amer. Micros. Soc.*, **52**: 37, pl. 7, figs. 1-3. [Marshall Collection]

glandulosus Koenike, 1886, *Zeit. Wissen. zool.*, **43**: 279-284, pl. 9, figs. 17-24.

jasperensis Marshall, 1929, *Univ. Toronto Stud., Biol. Ser.*, no. 33, pp. 65-66, pl. 2, figs. 14-15. [Marshall Collection]

parmatum Koenike, 1895, *Abh. naturw. Ver. Bremen*, **13**: 202-204, pl. 2, figs. 40-41.

tenuipalpis Koenike, 1895, *op. cit.*, pp. 204-206, pl. 2, figs. 42-47.

Family LEBERTIIDAE Thor

Lebertiidae Thor, 1900, *Nyt. mag. naturvid.*, **38**: 264.

Genus *Lebertia* Neuman

Generotype: *Lebertia insignis* Neuman, 1880, *K. Svenska Vetenskap. Handl.*, n. ser., (4), **17**, (3), pp. 69-70, pl. 8, fig. 4.

Lebertia Neuman, 1880, *op. cit.*, pp. 68-69.

artaacetabula Marshall, 1912, *Trans. Amer. Micros. Soc.*, **31**: 227, pl. 27, figs. 1-3. [Marshall Collection]

distincta Marshall, 1914, *Trans. Wis. Acad. Sci.*, **17**: 1301, pl. 93, figs. 21-23. [Marshall Collection]

martisensis Marshall, 1943, *Trans. Amer. Micros. Soc.*, **62**: 408-410, pl. 3, figs. 23-25. [Marshall Collection]

needhami Marshall, 1943, *op. cit.*, p. 408, pl. 3, figs. 28-30. [Marshall Collection]

ontarioensis Marshall, 1929, *Univ. Toronto Stud., Biol. Ser.*, no. 33, pp. 70-71, pl. 5, figs. 46-47. [Marshall Collection]

¹ Four new forms of *Sperchon*, *S. brevirostris* ssp. *scabriosus*, *S. mitchelli*, *S. glandulosus canadensis*, and *S. plumifer acadiensis*, are proposed by Habeeb (*Leaf. Acad. Biol.*, no. 1, p. 8). Each form is described in less than fifty words and unillustrated. These descriptions do not satisfy the requirements of Article 25c of the International Code of Zoological Nomenclature.

- parmata** Marshall, 1912, Trans. Amer. Micros. Soc., **31**: 226-227, pl. 27, figs. 4-5, pl. 28, figs. 6-7. [Marshall Collection]
- porosa** Thor, 1900, Nyt. mag. naturvid., **38**: 273.
- quinquemaculosa** Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 315, 317, figs. 5-8. [Marshall Collection]
- setosa** Koenike, 1912, Trans. Roy. Canad. Inst., **9**: 294-295, pl. 2, fig. 20.
tau-insignita Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 201-202 (in part).
- tyrrelli** Koenike, 1912, Trans. Roy. Canad. Inst., **9**: 290-293, pl. 1, fig. 16, pl. 2, figs. 13-15.
tau-insignita Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 201-202 (in part).
- wolcottii** Koenike, 1912, Trans. Roy. Canad. Inst., **9**: 292-294, pl. 1, figs. 17-18, pl. 2, fig. 19.
tau-insignita Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 201-202 (in part).
- wyomingensis** Marshall, 1933, Trans. Amer. Micros. Soc., **52**: 39-40, pl. 8, figs. 16-17. [Marshall Collection]

Genus *Oxus* Kramer

- Generotype: *Oxus oblongus* Kramer, 1879, Arch. Naturg., **45**, (Bd. 1), pp. 5-7, pl. 1, figs. 2a-2c.
- Oxus* Kramer, 1877, op. cit., **43**, (Bd. 1), pp. 240-241.
- connatus** Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 71-72, pl. 4, fig. 35. [Marshall Collection]
- elongatus** Marshall, 1929, op. cit., p. 72, pl. 4, fig. 34.
- intermedius** Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 31, pl. 1, figs. 1-3. [Marshall Collection]

Genus *Frontipoda* Koenike

- Generotype: *Hydrachna musculus* Müller, 1776, Zool. Danicae Prodrömus, p. 191.
- Frontipoda* Koenike, 1891, Zool. Anz., **14**: 19.
- americana** Marshall, 1914, Trans. Wis. Acad. Sci., **17**: 1300-1301, pl. 92, figs. 1-8. [Marshall Collection]

Genus *Gnaphiscus* Koenike

- Generotype: *Gnaphiscus setosus* Koenike, 1898, Zool. Anz., **21**: 262-263.
- Gnaphiscus* Koenike, 1898, loc. cit.
- occidentalis** Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 247, pl. 13, figs. 36-40, pl. 14, figs. 51-55. [Marshall Collection]

Family TORRENTICOLIDAE Oudemans

- Torrenticolidae* Oudemans, 1941, Zool. Anz., **136**: 178.
- Atractidaeidae* Thor, 1902, op. cit., **25**: 408.

Genus *Torrenticola* Piersig

Generotype: *Atractides anomalus* Koch, 1837, Deutschl. Crust., Myr., Arach., Heft 11, no. 10.

Torrenticola Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, 22-23: 155.

Atractides auct. (nec Koch).

californicus Marshall, 1943, Trans. Amer. Micros. Soc., 62: 315-316, pl. 2, figs. 14-16. [Marshall Collection]

compactus Marshall, 1943, op. cit., p. 315, pl. 3, figs. 25-26, pl. 4, fig. 27. [Marshall Collection]

ellipsoidalis Marshall, 1943, op. cit., pp. 308-310, pl. 2, figs. 11-13. [Marshall Collection]

geographicus Marshall, 1943, op. cit., p. 314, pl. 3, figs. 21-24. [Marshall Collection]

indistinctus Marshall, 1929, Proc. Indiana Acad. Sci., 38: 317, 319, figs. 16-18. [Marshall Collection]

jordanensis Marshall, 1930, Trans. Wis. Acad. Sci., 25: 248-249, pl. 6, figs. 12-14. [Marshall Collection]

mercedensis Marshall, 1943, Trans. Amer. Micros. Soc., 62: 310, 312, pl. 2, figs. 9-10. [Marshall Collection]

oblongatus Marshall, 1943, op. cit., p. 316, pl. 4, figs. 28-29, pl. 5, fig. 40. [Marshall Collection]

obovatus Marshall, 1943, op. cit., pp. 316, 318, pl. 5, figs. 35-39. [Marshall Collection]

occidentalis Marshall, 1933, op. cit., 52: 40, pl. 7, figs. 5-7. [Marshall Collection]

sierrensis Marshall, 1943, op. cit., 62: 307, pl. 1, figs. 1-4. [Marshall Collection]

simulans Marshall, 1933, op. cit., 52: 40, pl. 7, figs. 8-10. [Marshall Collection]

tahoei Marshall, 1943, op. cit., 62: 308, pl. 1, figs. 5-7. [Marshall Collection]

waddelicus Marshall, 1943, op. cit., pp. 312, 314, pl. 3, figs. 17-20. [Marshall Collection]

Genus *Testudacarus* Walter

Generotype: *Testudacarus tripeltatus* Walter, 1928, Rec. Indian Mus., 30: pp. 75-78, figs. 8-10.

Testudacarus Walter, 1928, op. cit., p. 75.

americanus Marshall, 1943, Trans. Amer. Micros. Soc., 62: 320, pl. 6, figs. 46-48. [Marshall Collection]

minimus Marshall, 1943, op. cit., p. 322, pl. 6, figs. 43-45. [Marshall Collection]

Family LIMNESIIDAE Thor

Limnesiidae Thor, 1900, Nyt. mag. naturvid., 38: 265.

Genus *Limnesia* Koch

Generotype: *Limnesia fulgida* Koch.

Limnesia Koch, 1842, Übers. Arachnidensystems, 3: 27.

Limnesiopsis Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, 22-23: 52.

- anomala** Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 207-208, pl. 2, figs. 49-53.
subsp. *marshallae* Viets, 1938, Zool. Anz., **121**: 134-135.
anomala Marshall, 1932, (male only), Trans. Wis. Acad. Sci., **27**: 346, pl. 7, fig. 7.
- coerulea** Lundblad, 1941, Zool. Anz., **133**: 158.
- columbica** Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 239-240, pl. 11, figs. 9-12. [Marshall Collection]
- cornuta** Wolcott, 1903, op. cit., **24**: 89-92, pl. 12, figs. 1-5. [Marshall Collection]
- fulgida** Koch, 1835, Deutschl. Crust., Myr., Arachn., Heft 2, no. 19.
histrionica Wolcott, 1903, Trans. Amer. Micros. Soc., **24**: 92-95, pl. 12, figs. 6-7.
wolcottii Piersig, 1905, Zool. Centr., **12**: 198.
- koenikea** Piersig, 1894, Zool. Anz., **17**: 151.
- maculata** Müller, 1776, Zool. Danicae Prodrömus, p. 191.
americana Piersig, 1905, Zool. Centr., **12**: 198.
elliptica Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 240, pl. 11, figs. 13-14. [Marshall Collection]
- marshallae** Viets, 1938, Zool. Anz., **121**: 134-135.
anomala Marshall, 1927, Trans. Amer. Micros. Soc., **46**: 213, pl. 7, figs. 5-6.
anomala Marshall, 1932, Trans. Wis. Acad. Sci., **27**: 346, pl. 7, figs. 6-8.
hutchinsoni Lundblad, 1941, Zool. Anz., **133**: 158.
- marshalliana** Lundblad, 1952, Ark. Zool., (2), **3**: 525.
marshallae Lundblad, 1941, Zool. Anz., **133**: 157.
- paucispina** Wolcott, 1903, Trans. Amer. Micros. Soc., **24**: 98-100, pl. 13, figs. 10-11. [Marshall Collection]
- protractipora** Lundblad, 1941, Zool. Anz., **133**: 157.
- undulata** Müller, 1781, Hydrachnae aquis Danicae, p. 80, pl. 11, fig. 1.
var. *californica* Lundblad, 1941, Zool. Anz., **133**: 158.
- wawaseea** Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 315, figs. 9-11. [Marshall Collection]

Genus *Tyrrellia* Koenike

Generotype: *Tyrrellia circularis* Koenike.

Tyrrellia Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 198-199.

circularis Koenike, 1895, op. cit., pp. 199-201, pl. 2, figs. 36-38.

var. *monensis* Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 386, pl. 1, figs. 5-7, pl. 2, fig. 15. [Marshall Collection]

ovalis Marshall, 1932, op. cit., **27**: 342-343, pl. 8, figs. 18-21. [Marshall Collection]

Family PONTARACHNIDAE Thor

Pontarachnidae Thor, 1929, Nyt. mag. naturvid., **67**, pl. 7.

Genus **Pontarachna** Philippi

Generotype: *Pontarachna punctulum* Philippi, 1840, Arch. Naturg., 6, (Bd. 1), pp. 191-193, pl. 4, figs. 4-5.

Pontarachna Philippi, 1840, op. cit., p. 193.

cruciata Hall, 1912, Pomona Coll., Rep. Laguna Mar. Lab., 1: 183-184, fig. 102.

Family **HYGROBATIDAE** Koch

Hygrobatides Koch, 1842, Übers. Arachnidensystems, 3: 7.

Genus **Hygrobates** Koch

Generotype: *Hygrobates lutescens* Koch, 1841, Deutschl. Crust., Myr., Arachn., Heft 37, no. 13.

Hygrobates Koch, 1837, op. cit., Heft 10, no. 8.

decaporus Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 215-216, pl. 3, figs. 62-63.

exilis Koenike, 1895, op. cit., pp. 213-215, pl. 3, figs. 60-61.

longipalpis Hermann, 1804, Mém. Aptérolog., p. 55, pl. 3, fig. 1, pl. 9, fig. P.

ruber Marshall, 1926, Univ. Iowa Stud. Nat. Hist., 11: 32, pl. 1, figs. 5-7.

multiporus Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 216-217, pl. 3, fig. 64. [Marshall Collection]

neooctoporus Marshall, 1926, Univ. Iowa Stud. Nat. Hist., 11: 34. [Marshall Collection]

octoporus Marshall, 1924, Trans. Amer. Micros. Soc., 43: 238-239, pl. 11, figs. 1-5.

occidentalis Marshall, 1943, op. cit., 62: 414, pl. 4, figs. 39-41. [Marshall Collection]

Genus **Atractides** Koch

Generotype: *Atractides spinipes* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 16.

Atractides Koch, 1837, loc. cit.

Megapus Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), 17, (3), pp. 63-64.

crassipalpis Koenike, 1909, Abh. naturw. Ver. Bremen, 19: 246.

ovalis Koenike, 1895, op. cit., 13: 211-212, pl. 3, figs. 58-59.

nodipalpis Thor, 1899, Arch. Math. Naturv., 21, (5), pp. 39-40, pl. 17, figs. 120-121 (Palearctic).

var. *americanus* Marshall, 1943, Trans. Amer. Micros. Soc., 62: 414-415, pl. 4, figs. 31-34. [Marshall Collection]

spinipes Marshall, 1933, op. cit., 52: 41, pl. 7, figs. 18-20.

parviscutus Marshall, 1915, Trans. Amer. Micros. Soc., 34: 186, pl. 6, figs. 1-4. [Marshall Collection]

orthopes Marshall, 1915, op. cit., p. 187, pl. 6, figs. 10-12.

?*phenoplectes* Marshall, 1915, op. cit., pp. 186-187, pl. 6, figs. 5-9. [Marshall Collection]

sturgesonsis Marshall, 1927, op. cit., 46: 274-275, pl. 8, figs. 16-19. [Marshall Collection]

Family **UNIONICOLIDAE** Oudemans

Unionicolidae Oudemans, 1909, Tijdschr. Ent., 52: 60.

Genus **Unionicola** Haldeman

Generotype: *Unionicola crassipes* Müller.

Unionicola Haldeman, 1842, Zool. Contr., 1: 1.

Atax Koch, 1842, Übers. Arachnidensystems, 3: 7.

abnormipes Wolcott, 1898, Zool. Bull., 1: 280-281, fig. 2. [Marshall Collection]

aculeatus Koenike, 1890, Zool. Anz., 13: 139-140.

sayi Piersig, 1901, Das Tierreich, 13: 213.

adensameri Thon, 1901, Ann. Naturhist. Hofmus., 16: 31-35, pl. 3.

arcuata Wolcott, 1898, Zool. Bull., 1: 284-285, fig. 5. [Marshall Collection]

campelomaicola Marshall, 1935, Univ. Toronto Stud., Biol. Ser., no. 39, pp. 99-102, figs. 1-5. [Marshall Collection]

crassipes Müller, 1776, Zool. Danicae Prodrum, p. 189.

figuralis Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 7, no. 10.

fossulatus Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 221-222, pl. 3, figs. 68-71.

indistinctus Wolcott, 1898, Zool. Bull., 1: 281-282, fig. 3. [Marshall Collection]

intermedia Koenike, 1882, Abh. naturw. Ver. Bremen, 7: 265-266 (Palearctic).

var. *wolcottii* Piersig, 1900, Zool. Anz., 23: 211-212. [Marshall Collection]

pectinatus Wolcott, 1898, Zool. Bull., 1: 280, fig. 1. [Marshall Collection]

serratus Wolcott, 1898, op. cit., pp. 282-283, fig. 4. [Marshall Collection]

stricta Wolcott, 1898, op. cit., pp. 283-284. [Marshall Collection]

tumidus Wolcott, 1898, op. cit., p. 285, fig. 6. [Marshall Collection]

ypsilophora Bonz, 1783, K. Deutsche Akad. Naturf. Halle, nova acta Leopoldana, 7: 52, pl. 1, figs. 1-4.

haldemani Piersig, 1900, Zool. Anz., 23: 212.

formosa Dana and Whelpley, 1836, Amer. Jour. Sci., (1), 30: 357-358, figs. 1-8.

Genus **Najadicola** Piersig

Generotype: *Unionicola ingens* Koenike.

Najadicola Piersig, 1897, Zool. Anz., 20: 59-60.

ingens Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 219-220, pl. 3, figs. 65-67.

Genus **Neumania** Lebert

Generotype: *Hydrachna spinipes* Müller, 1776, Zool. Danicae Prodrum, p. 189.

Neumania Lebert, 1879, Bull. Soc. Vaud. Sci. Natur., 16: 357.

armata Marshall, 1922, Trans. Wis. Acad. Sci., 20: 209, pl. 3, figs. 11-13. [Marshall Collection]

muttkowskii Marshall, 1922, op. cit., p. 208, pl. 2, fig. 10 (in part). [Marshall Collection]

- distincta* Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 210-211, pl. 4, figs. 20, 23. [Marshall Collection]
- brevibrachiata* Marshall, 1922, op. cit., p. 211, pl. 4, figs. 24-25. [Marshall Collection]
- okobojica* Marshall, 1926, Univ. Iowa Stud. Nat. Hist., **11**: 31, pl. 2, figs. 11-12. [Marshall Collection]
- extendens* Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 209, pl. 3, figs. 14-16. [Marshall Collection]
- punctata* Marshall, 1922, (female only), op. cit., pp. 211-212, pl. 4, fig. 29. [Marshall Collection]
- fragilis* Marshall, 1922, op. cit., p. 208, pl. 2, figs. 7-9. [Marshall Collection]
- hickmani* Marshall, 1933, op. cit., **28**: 46, pl. 4, figs. 41-43. [Marshall Collection]
- kodiakica* Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 246, pl. 14, figs. 42-43. [Marshall Collection]
- longiseta* Marshall, 1924, op. cit., p. 243, pl. 12, fig. 23, pl. 13, fig. 26. [Marshall Collection]
- ovata* Marshall, 1922, Trans. Wis. Acad. Sci., **20**: 206-207, pl. 2, fig. 1.
- papillator* Marshall, 1922, op. cit., pp. 209-210, pl. 3, figs. 17-20, pl. 4, fig. 21. [Marshall Collection]
- pubescens* Marshall, 1929, Proc. Indiana Acad. Sci., **38**: 319, figs. 1-4. [Marshall Collection]
- punctata* Marshall, 1922, (male only), Trans. Wis. Acad. Sci., **20**: 211-212. [Marshall Collection]
- semicircularis* Marshall, 1922, op. cit., p. 207, pl. 2, figs. 2-3. [Marshall Collection]
- tenuipalpis* Marshall, 1922, op. cit., pp. 207-208, pl. 2, figs. 4-6. [Marshall Collection]
- muttkowskii* Marshall, 1922, op. cit., p. 208, pl. 2, fig. 10 (in part). [Marshall Collection]
- ?*vernalis* Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 218-219.

Genus *Koenikea* Wolcott

Generotype: *Koenikea concava* Wolcott (male only).

Koenikea Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 189-190.

Tanaognathus Wolcott, 1900, op. cit., pp. 193-194.

- alata* Lundblad, 1943, K. Svenska Vetenskap. Handl., **20**, (5), p. 15, fig. 7.
- concava* Wolcott, 1900, (male only), Trans. Amer. Micros. Soc., **21**: 190-193, pl. 11, figs. 15, 17, 19, pl. 12, fig. 24. [Marshall Collection]
- haldemani* Viets, 1930, Zool. Anz., **92**: 268-272, figs. 6-8.
- marshallae* Viets, 1930, op. cit., pp. 267-271, figs. 1-5.
- spinipes* Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 194-197, pl. 12, figs. 25-28. [Marshall Collection]
- wolcottii* Viets, 1930, Zool. Anz., **92**: 266. [Marshall Collection]
- concava* Wolcott, 1900, (female only), Trans. Amer. Micros. Soc., **21**: 190-193, pl. 11, figs. 18, 20-21, pl. 12, fig. 23. [Marshall Collection]

Genus *Huitfeldtia* ThorGenerotype: *Huitfeldtia rectipes* Thor.*Huitfeldtia* Thor, 1898, Arch. Math. Naturv., **20**, (7), pp. 1-2.*rectipes* Thor, 1898, op. cit., pp. 4-5, pl. 5, figs. 1-7.Family **FELTRIIDAE** Thor*Feltriidae* Thor, 1929, Nyt. mag. naturvid., **67**, pl. 7.Genus *Feltria* KoenikeGenerotype: *Feltria minuta* Koenike.*Feltria* Koenike, 1892, Zool. Anz., **15**: 323.*minuta* Koenike, 1892, op. cit., pp. 323-324, figs. 3-4.Family **PIONIDAE** Thor*Pionidae* Thor, 1900, Nyt. mag. naturvid., **38**: 265.Genus *Wettina* PiersigGenerotype: *Tiphys podagricus* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 9.*Wettina* Piersig, 1892, Zool. Anz., **15**: 408-410.*primaria* Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 83, pl. 4, figs. 39-41. [Marshall Collection]Genus *Hydrochoreutes* KochGenerotype: *Spio unguolata* Koch.*Hydrochoreutes* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 11.*ungulatus* Koch, 1835, op. cit., Heft 5, no. 17.Genus *Tiphys* KochGenerotype: *Tiphys sagulatus* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 11, no. 7.*Tiphys* Koch, 1835, op. cit., Heft 5, no. 19.*Acercus* Koch, 1842, Übers. Arachnidensystems, **3**: 23.*Laminipes* Piersig, 1901, Zool. Anz., **24**: 219-220.*diversus* Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 83-84, pl. 5, figs. 48-50. [Marshall Collection]*simulans* Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 244, pl. 14, figs. 46-47. [Marshall Collection]*torris* Müller, 1776, Zool. Danicae Prodrömus, p. 191.var. *americanus* Marshall, 1937, Trans. Wis. Acad. Sci., **30**: 237, pl. 8, figs. 58-61.

Genus *Pionopsis* Piersig

Generotype: *Hydrachne lutescens* Hermann, 1804, Mém. Aptérolog., p. 57, pl. 6, fig. 7.

Pionopsis Piersig, 1894, Zool. Anz., 17: 215-216.

latilamellis Marshall, 1924, Trans. Amer. Micros. Soc., 43: 244, pl. 13, figs. 32-34. [Marshall Collection]

Genus *Pionacercus* Piersig

Generotype: *Pionacercus leuckarti* Piersig, 1894, Zool. Anz., 17: 213-214, figs. 1-2.

Pionacercus Piersig, 1894, op. cit., p. 213.

novus Marshall, 1924, Trans. Amer. Micros. Soc., 43: 244-245, pl. 13, fig. 35, pl. 14, fig. 41. [Marshall Collection]

Genus *Piona* Koch

Generotype: *Nesaea rosea* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 10, no. 7.

Piona Koch, 1842, Übers. Arachnidensystems, 3: 13.

Curripes Koenike, 1891, Zool. Anz., 14: 19-20.

americana Marshall, 1929, Trans. Wis. Acad. Sci., 24: 401-404, pl. 9, figs. 1-9. [Marshall Collection]

carnea Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 8, no. 24.

neocarnea Marshall, 1924, Trans. Amer. Micros. Soc., 43: 241, pl. 12, figs. 15-17. [Marshall Collection]

conglobata Koch, 1836, Deutschl. Crust., Myr., Arachn., Heft 8, no. 9 (Palaearctic).

var. *wisconsinensis* Marshall, 1935, Trans. Wis. Acad. Sci., 29: 284, pl. 10, figs. 43-47. [Marshall Collection]

constrictus Wolcott, 1902, Trans. Amer. Micros. Soc., 23: 222-226, pl. 30, figs. 14-18. [Marshall Collection]

coronis Wolcott, 1902, op. cit., pp. 208-210, pl. 29, figs. 1-2. [Marshall Collection]

crassus Wolcott, 1902, op. cit., pp. 246-249, pl. 33, figs. 57-60. [Marshall Collection]

debilis Wolcott, 1902, op. cit., pp. 234-235, pl. 32, figs. 44-46. [Marshall Collection]

exilis Wolcott, 1902, op. cit., pp. 210-213, pl. 29, figs. 3-8. [Marshall Collection]

guatemalensis Stoll, 1887, Biol. Centr.-Amer., 13: 11-12, pl. 10, figs. 2-2b, pl. 11, figs. 1-1f.

inconstans Wolcott, 1902, Trans. Amer. Micros. Soc., 23: 241-243, pl. 32, fig. 47, pl. 33, figs. 48-50. [Marshall Collection]

insularis Marshall, 1924, op. cit., 43: 243, pl. 12, fig. 24, pl. 13, figs. 30, 31. [Marshall Collection]

interrupta Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 81-82, pl. 6, figs. 59-60. [Marshall Collection]

linguaplax Crowell, 1953, Amer. Midl. Nat., 50: 426-431, figs. 1-12. [C.N.H.M. Collection]

- medius** Wolcott, 1902, Trans. Amer. Micros. Soc., **23**: 229-231, pl. 31, figs. 30-31. [Marshall Collection]
- nodata** Müller, 1776, Zool. Danicae Prodrömus, p. 191 (Palearctic).
var. *latigenitalia* Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 242, pl. 12, fig. 22, pl. 13, figs. 27-29. [Marshall Collection]
? *fuscatus* Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 209.
- obturbans** Piersig, 1896, Zool. Anz., **19**: 439-440.
- pugilis** Wolcott, 1902, Trans. Amer. Micros. Soc., **23**: 213-216, pl. 29, figs. 9-12. [Marshall Collection]
- reighardi** Wolcott, 1902, op. cit., pp. 235-239, pl. 32, figs. 35-38. [Marshall Collection]
- rotunda** Kramer, 1879, Arch. Naturg., **45**, (Bd. 1), p. 12, pl. 1, fig. 6.
- rubrapes** Marshall, 1924, Trans. Amer. Micros. Soc., **43**: 241-242, pl. 12, figs. 18-21. [Marshall Collection]
- setiger** Wolcott, 1902, op. cit., **23**: 243-246, pl. 33, figs. 51-56. [Marshall Collection]
- socialis** Marshall, 1930, op. cit., **49**: 343-344, pl. 39, figs. 5-10. [Marshall Collection]
- spinulosus** Wolcott, 1902, op. cit., pp. 226-229, pl. 31, figs. 24-29. [Marshall Collection]
- triangularis** Wolcott, 1902, op. cit., **23**: 220-222, pl. 31, figs. 32-33. [Marshall Collection]
- turgidus** Wolcott, 1902, op. cit., pp. 216-220, pl. 30, figs. 19-23. [Marshall Collection]
- wolcottii** Marshall, 1937, Trans. Wis. Acad. Sci., **30**: 235-236, pl. 7, figs. 49-52. [Marshall Collection]

Genus *Forelia* Haller

- Generotype: *Arrhenurus variegator* Koch, 1837, Deutschl. Crust., Myr., Arachn., Heft 12, no. 24.
- Forelia* Haller, 1882, Mitt. naturf. Ges. Bern, **1881**, Heft 2, pp. 58-59.
- Tiphys* Wolcott, 1905, Trans. Amer. Micros. Soc., **26**: 214-215.
- liliacea** Müller, 1776, Zool. Danicae Prodrömus, p. 190.
- ovalis** Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 78-79, pl. 5, figs. 42-45. [Marshall Collection]

Family AXONOPSIDAE Viets

Axonopsidae Viets, 1929, Zool. Anz., **80**: 169.

Genus *Albia* Thon

- Generotype: *Albia stationis* Thon.
- Albia* Thon, 1899, Zool. Anz., **22**: 100-101.
- caerulea** Marshall, 1927, Trans. Amer. Micros. Soc., **46**: 277, pl. 9, figs. 25-27. [Marshall Collection]
- ? **stationis** Thon, 1899, Zool. Anz., **22**: 101-102.

Genus **Brachypoda** Lebert

Generotype: *Hydrachna versicolor* Müller, 1776, Zool. Danicae Prodrumus, p. 191.

Brachypoda Lebert, 1879, Bull. Soc. Vaud. Sci. Natur., (2), 16: 340, 374.

Brachypoda Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 9 (in part).

setosicauda Habeeb, 1953, op. cit., p. 12, figs. 26-27.

ssp. *acuticauda* Habeeb, 1953, op. cit., p. 12, fig. 28.

Genus **Axonopsis** Piersig

Generotype: *Hydrachna complanata* Müller, 1776, Zool. Danicae Prodrumus, p. 191.

Axonopsis Piersig, 1893, Zool. Anz., 16: 310.

setoniensis Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 9, figs. 23-25.

Genus **Ljania** Thor

Generotype: *Ljania bipapillata* Thor.

Ljania Thor, 1898, Arch. f. Math. Naturv., 20, (13), p. 3.

bipapillata Thor, 1898, op. cit., p. 3 (Palearctic).

ssp. *purpurea* Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 9.

Genus **Neoaxonopsis** Lundblad

Generotype: *Neoaxonopsis odontogaster* Lundblad, 1938, Zool. Anz., 122: 38-39.

Neoaxonopsis Lundblad, 1938, op. cit., p. 38.

Brachypoda Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 9 (in part).

pilositarsa Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 9, figs. 20-23.

unguitarsa Habeeb, 1953, op. cit., pp. 9, 12, figs. 29-30.

Genus **Aturus** Kramer

Generotype: *Aturus scaber* Kramer, 1875, Arch. Naturg., 43, (Bd. 1), pp. 309-310, pl. 8, fig. 3.

Aturus Kramer, 1875, op. cit., p. 309.

acadiensis Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 15.

canadensis Habeeb, 1953, Natural. Canad., 80: 274-275.

deceptor Habeeb, 1953, op. cit., pp. 275-276.

droueti Habeeb, 1953, Leaflet Acad. Biol., no. 1, p. 15.

estellae Habeeb, 1953, op. cit., p. 2, figs. 6-11.

formosus Habeeb, 1953, op. cit., p. 4, figs. 12-14, 18.

ssp. *pallidus* Habeeb, op. cit., p. 4.

mirabilis Piersig, 1897, Sitzungs. naturf. Ges. Leipzig, 22-23: 157.

ssp. *scaber* Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 186-191, pl. 1, fig. 23.

projector Habeeb, 1953, Natural. Canad., 80: 275.

Family **MIDEIDAE** Viets

Mideidae Viets, 1929, Zool. Anz., **80**: 169.

Genus **Midea** Bruzelius

Generotype: *Hydrachna orbiculata* Müller, 1776, Zool. Danicae Prodrumus, p. 190.

Midea Bruzelius, 1854, Biskrif. ofver Hydrachnider, p. 35.

determina Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, pp. 84-85, pl. 7, figs. 62-66. [Marshall Collection]

expansa Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 138-139, pl. 4, figs. 26-30. [Marshall Collection]

Family **MIDEOPSIDAE** Thor

Mideopsidae Thor, 1928, Zeits. Morph. Okol. Tiere, **11**: 109.

Genus **Mideopsis** Neuman

Generotype: *Hydrachna orbicularis* Müller.

Mideopsis Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), **17**, (3), p. 67.

americanus Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 140-141, pl. 1, figs. 1-4. [Marshall Collection]

fibrosa Lundblad, 1941, Zool. Anz., **133**: 159-160.

lamellipalpis Lundblad, 1941, op. cit., p. 159.

orbicularis Müller, 1776, Zool. Danicae Prodrumus, p. 190.

rosea Lundblad, 1941, Zool. Anz., **133**: 159.

Genus **Xystonotus** Wolcott

Generotype: *Xystonotus asper* Wolcott.

Xystonotus Wolcott, 1900, Trans. Amer. Micros. Soc., **21**: 185-186.

asper Wolcott, 1900, op. cit., pp. 186-189, pl. 10, figs. 8-14. [Marshall Collection]

reelfootensis Hoff, 1944, Jour. Tenn. Acad. Sci., **19**: 234-238, pl. 1, figs. 1-10. [Marshall Collection]

Family **KRENDOWSKIJIDAE** Lundblad

Krendowskijidae Lundblad, 1930, Zool. bidrag Uppsala, **13**: 56-58.

Genus **Krendowskia** Piersig

Generotype: *Krendowskia latissima* Piersig, 1895, Zool. Anz., **18**: 147-148.

Krendowskia Piersig, 1895, op. cit., pp. 147-148.

similis Viets, 1931, op. cit., **93**: 42-44, figs. 12-14.

Genus *Geayia* Thor

Generotype: *Geayia venezuelae* Thor, 1897, Bull. Mus. d'Hist. Nat., 3: 12-13, figs. 1-6.

Geayia Thor, 1897, op. cit., pp. 11-12.

Krendowskia Wolcott, 1900, Trans. Amer. Micros. Soc., 21: 178-181.

Krendowskia Wolcott, 1905, op. cit., 26: 193.

ovata Wolcott, 1900, Trans. Amer. Micros. Soc., 21: 181-185, pl. 9, figs. 1-7. [Marshall Collection]

Family ARRENURIDAE Thor

Arrenuridae Thor, 1900, Nyt. mag. naturvid., 38: 266.

Genus *Arrenurus* Dugés

Generotype: *Arrenurus viridis* Dugés, 1834, Ann. Sci. Nat. (Zool.), (2), 1: 154-156, pl. 10, figs. 18-21.

Arrenurus Dugés, 1834, op. cit., pp. 154-156.

Steganaspis Wolcott, 1901, Trans. Amer. Micros. Soc., 22: 105-106.

Subgenus *Truncaturus* Thor

Generotype: *Arrenurus paluster* Thor, 1900, Nyt. mag. naturvid., 38: 380-382, pl. 8, figs. 25-27.

Truncaturus Thor, 1900, op. cit., pp. 379-380.

kenki Marshall, 1944, Amer. Midl. Nat., 31: 631, 633, pl. 1, figs. 1-2, 6. [Marshall Collection]

Subgenus *Micruracarus* Viets

Generotype: *Arrhenurus forpicatus* Neuman, 1880, K. Svenska Vetenskap. Handl., n. ser., (4), 17, (3), p. 90, pl. 6, figs. 2.

Micruracarus Viets, 1911, Zool. Anz., 38: 504.

acutus Marshall, 1908, Trans. Amer. Micros. Soc., 28: 92, pl. 8, figs. 14-16. [Marshall Collection]

bicaudatus Marshall, 1908, op. cit., p. 91, pl. 7, figs. 8-10. [Marshall Collection]

couleensis Lavers, 1945, op. cit., 64: 233-234, pl. 1, figs. 1-4. [Marshall Collection]

crenellatus Marshall, 1908, op. cit., 28: 90-91, pl. 8, figs. 11-13. [Marshall Collection]

infundibularis Marshall, 1908, op. cit., pp. 93-94, pl. 8, fig. 20, pl. 9, figs. 21-22. [Marshall Collection]

laticaudatus Marshall, 1908, op. cit., pp. 95-96, pl. 9, figs. 23-25. [Marshall Collection]

lyriger Marshall, 1908, op. cit., pp. 94-95, pl. 9, fig. 26, pl. 10, figs. 27-28. [Marshall Collection]

montifer Marshall, 1908, op. cit., pp. 96-97, pl. 10, figs. 29-31. [Marshall Collection]

- muttkowskii** Marshall, 1940, Trans. Wis. Acad. Sci., **32**: 144, pl. 4, figs. 33-35. [Marshall Collection]
- pseudosetiger** Marshall, 1921, Trans. Amer. Micros. Soc., **40**: 170, pl. 9, figs. 4-6. [Marshall Collection]
- setiger* Marshall, 1910, op. cit., **29**: 97-98.
- rotundus** Marshall, 1908, op. cit., **28**: 89-90, pl. 7, figs. 1-4, pl. 9, fig. 128. [Marshall Collection]
- scutulatus** Marshall, 1908, op. cit., p. 93, pl. 8, figs. 17-19. [Marshall Collection]
- setiger** Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 178-182, pl. 1, figs. 11-13.
- oralis* Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 90, pl. 7, figs. 5-7. [Marshall Collection]

Subgenus *Megaluracarus* Viets

Generotype: *Hydrachna globator* Müller, 1776, Zool. Danicae Prodromus, p. 188.

Megaluracarus Viets, 1911, Zool. Anz., **38**: 504.

apetiolatus Piersig, 1904, Zool. Centr., **11**: 210.

corniger Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 155-156, pl. 15, fig. 7, *a-e*.

aphelocercus Lavers, 1945, Trans. Amer. Micros. Soc., **64**: 248, pl. 4, figs. 33-38. [Marshall Collection]

belonocercus Lavers, 1945, op. cit., pp. 238-239, pl. 1, figs. 7-12. [Marshall Collection]

birgei Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 158-159, pl. 16, fig. 10, *a-f*, pl. 17, fig. 10, *e*. [Marshall Collection]

capillatus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 101-102, pl. 12, figs. 43-45.

cardiacus Marshall, 1903, Trans. Wis. Acad. Sci., **14**: 153-154, pl. 17, fig. 5, *d-i*, pl. 18, fig. 5, *a-c*. [Marshall Collection]

cornicularis Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 112-113, pl. 14, figs. 68-70. [Marshall Collection]

elevatus Marshall, 1914, Trans. Wis. Acad. Sci., **17**: 1301-1302, pl. 1, figs. 12-15, pl. 2, fig. 16.

elongatus Marshall, 1924, op. cit., **21**: 214, pl. 7, figs. 6-7, pl. 8, figs. 14-15. [Marshall Collection]

expansus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 107-108, pl. 13, figs. 53-55. [Marshall Collection]

invaginatus Lavers, 1945, op. cit., **64**: 246, 248, pl. 3, figs. 27-32. [Marshall Collection]

kincaidii Lavers, 1945, op. cit., pp. 242, 244, pl. 3, figs. 22-26, pl. 6, fig. 63. [Marshall Collection]

krameri Koenike, 1895, Abh. naturw. Ver. Bremen, **13**: 182-185, pl. 1, figs. 16-20.

laversi Marshall, 1944, Amer. Midl. Nat., **31**: 633, 635, pl. 2, figs. 7-11, pl. 3, fig. 17. [Marshall Collection]

longicaudatus Marshall, 1908, Trans. Amer. Micros. Soc., **28**: 111-112, pl. 14, figs. 65-67. [Marshall Collection]

mamillanus Marshall, 1908, op. cit., pp. 98-99, pl. 10, figs. 32-34, pl. 11, fig. 35. [Marshall Collection]

- manubriator* Marshall, 1903, Trans. Wis. Acad. Sci., 14: 151-152, pl. 15, fig. 3, *b*, pl. 16, fig. 3, *a*, *c*, *d*, pl. 17, fig. 3, *e*, *f*. [Marshall Collection]
- marshalli* Piersig, 1904, Zool. Centr., 11: 210.
globator Marshall, 1903, Trans. Wis. Acad. Sci., 14: 148-150, pl. 14, fig. 1, *a-g*, pl. 15, fig. 1, *e*.
- megalurus* Marshall, 1903, op. cit., pp. 150-151, pl. 14, fig. 2, *b*, *c*, *e*, *f*, pl. 15, fig. 2, *a*, *d*. [Marshall Collection]
- var. *intermedius* Marshall, 1940, op. cit., 32: 147-148, pl. 5, figs. 41-44. [Marshall Collection]
- morrisoni* Marshall, 1904, op. cit., 14: 523-524, pl. 40, fig. 2, *a-d*.
- parallellatus* Marshall, 1903, op. cit., 14: 154-155, pl. 16, fig. 6, *a-c*, pl. 17, fig. 6, *d*, pl. 18, fig. 6, *e*. [Marshall Collection]
- prominulus* Marshall, 1908, Trans. Amer. Micros. Soc., 28: 108-109, pl. 13, figs. 56-60. [Marshall Collection]
- pseudocaudatus* Piersig, 1905, Zool. Centr., 12: 185.
caudatus Marshall, 1904, Trans. Wis. Acad. Sci., 14: 521-523, pl. 40, fig. 1, *a-c*.
- pseudoconicus* Piersig, 1904, Zool. Centr., 11: 210.
conicus Marshall, 1903, Trans. Wis. Acad. Sci., 14: 158, pl. 18, fig. 9, *a-d*.
- pseudocylindratus* Piersig, 1904, Zool. Centr., 11: 210.
cylindratus Marshall, 1903, Trans. Wis. Acad. Sci., 14: 156-157, pl. 17, fig. 8, *a-d*.
- rawsoni* Marshall, 1929, Univ. Toronto Stud., Biol. Ser., no. 33, p. 86, pl. 7, figs. 67-70. [Marshall Collection]
- rectangularis* Marshall, 1908, Trans. Amer. Micros. Soc., 28: 110, pl. 14, figs. 61-63. [Marshall Collection]
- rheophilous* Lavers, 1945, op. cit., 64: 239, pl. 2, figs. 13-17, pl. 4, fig. 43. [Marshall Collection]
- scutuliformis* Marshall, 1908, op. cit., 28: 100, pl. 11, figs. 39-42. [Marshall Collection]
- semicircularis* Piersig, 1904, Zool. Centr., 11: 210.
securiformis Marshall, 1903, Trans. Wis. Acad. Sci., 14: 152-153, pl. 18, fig. 4, *a-c*.
- simulans* Marshall, 1921, Trans. Amer. Micros. Soc., 40: 169, pl. 10, figs. 17-21. [Marshall Collection]
- solifer* Marshall, 1908, op. cit., 28: 99, pl. 11, figs. 36-38. [Marshall Collection]
- tahoei* Marshall, 1910, op. cit., 29: 100-101, pl. 1, fig. 7, pl. 2, figs. 11-14, pl. 3, fig. 3. [Marshall Collection]
- uniformis* Marshall, 1921, op. cit., 40: 169, pl. 9, figs. 1-3. [Marshall Collection]
- wardi* Marshall, 1940, Trans. Wis. Acad. Sci., 32: 148, pl. 6, figs. 52-54. [Marshall Collection]

Subgenus *Arrenurus* *s. str.*

- americanus* Marshall, 1908, Trans. Amer. Micros. Soc., 28: 126-128, pl. 21, figs. 112-117. [Marshall Collection]
- var. *mucronatus* Lavers, 1945, op. cit., 64: 255-256, pl. 5, fig. 50. [Marshall Collection]

- amplus** Marshall, 1908, Trans. Amer. Micros. Soc., 28: 122-123, pl. 20, figs. 102-105. [Marshall Collection]
- auricularis** Lavers, 1945, op. cit., 64: 258, 260, pl. 5, figs. 51-53, pl. 6, figs. 60-62. [Marshall Collection]
- auris** Lavers, 1945, op. cit., pp. 260-261, pl. 6, figs. 55-58. [Marshall Collection]
- bleptopetiolatus** Cook, 1954, op. cit., 73: 48, 50, pl. 1, figs. 3, 7. [C.N.H.M. Collection]
- cascadensis** Lavers, 1945, op. cit., 64: 253, pl. 5, figs. 44-49. [Marshall Collection]
- compactilis** Marshall, 1908, op. cit., 28: 120, pl. 18, figs. 93-95. [Marshall Collection]
- dentipetiolatus** Marshall, 1908, op. cit., p. 117, pl. 16, fig. 81, pl. 17, figs. 82-83. [Marshall Collection]
- drepanophorus** Cook, 1954, op. cit., 73: 51-52, pl. 1, fig. 8, pl. 2, fig. 22, pl. 3, fig. 23. [C.N.H.M. Collection]
- falcicornis** Marshall, 1908, op. cit., 28: 121-122, pl. 19, figs. 96-98. [Marshall Collection]
- fissicorniformis** Cook, 1954, op. cit., 73: 50, pl. 1, figs. 2, 4. [C.N.H.M. Collection]
- fissicornis** Marshall, 1908, op. cit., 28: 130, pl. 22, figs. 125-127. [Marshall Collection]
- flabellifer** Marshall, 1908, op. cit., pp. 125-126, pl. 22, figs. 122-124. [Marshall Collection]
- gennadus** Cook, 1954, op. cit., 73: 54, pl. 3, figs. 27-28. [C.N.H.M. Collection]
- hungerfordi** Cook, 1954, op. cit., p. 52, pl. 2, figs. 14-16. [C.N.H.M. Collection]
- interpositus** Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 176-178, pl. 1, figs. 6-10.
- angustocaudatus* Marshall, 1908, Trans. Amer. Micros. Soc., 28: 116, pl. 16, figs. 77-79. [Marshall Collection]
- laticornis** Marshall, 1908, op. cit., p. 122, pl. 19, figs. 99-101. [Marshall Collection]
- lautus** Koenike, 1895, Abh. naturw. Ver. Bremen, 13: 172-176, pl. 1, figs. 1-5.
- magnicaudatus** Marshall, Trans. Amer. Micros. Soc., 28: 123-124, pl. 20, figs. 106-108. [Marshall Collection]
- major** Marshall, 1908, op. cit., pp. 128-129, pl. 21, figs. 118-120, pl. 22, fig. 121. [Marshall Collection]
- maryellenae** Cook, 1954, op. cit., 73: 57, pl. 4, figs. 40, 44. [C.N.H.M. Collection]
- neosuperior** Cook, 1954, op. cit., p. 56, pl. 4, figs. 37-38. [C.N.H.M. Collection]
- pinguisomus** Cook, 1954, op. cit., pp. 44, 46, pl. 1, figs. 9, 12. [C.N.H.M. Collection]
- pistillatus** Marshall, 1908, op. cit., 28: 119-120, pl. 18, figs. 90-92. [Marshall Collection]
- planus** Marshall, 1908, op. cit., pp. 115-116, pl. 16, figs. 75-76. [Marshall Collection]
- subsp. *ventropetiolatus* Lavers, 1945, op. cit., 64: 250-251, pl. 4, figs. 39-42, pl. 6, fig. 59. [Marshall Collection]
- platy-rotundo-cuspidator** Münchberg, 1951, Arch. Hydrobiol., 45: 383-388, figs. 1-8.

- pleopetiolatus* Marshall, 1944, Amer. Midl. Nat., 31: 635, 637, pl. 3, figs. 12-16. [Marshall Collection]
- pollictus* Marshall, 1910, Trans. Amer. Micros. Soc., 29: 106-107, pl. 1, figs. 9-10, pl. 3, figs. 25-28. [Marshall Collection]
- pseudosuperior* Cook, 1954, op. cit., 73: 55-56, pl. 4, figs. 41-42. [C.N.H.M. Collection]
- reflexus* Marshall, 1908, op. cit., 28: 117-118, pl. 17, figs. 84-86. [Marshall Collection]
- serratus* Marshall, 1919, op. cit., 38: 276, pl. 29, figs. 1-7. [Marshall Collection]
- superior* Marshall, 1908, op. cit., 28: 124-125, pl. 20, figs. 109-111. [Marshall Collection]
- tacomaensis* Marshall, 1924, Trans. Wis. Acad. Sci., 21: 213-214, pl. 7, figs. 1-5. [Marshall Collection]
- tetratumuli* Münchberg, 1953, Zool. Jahrb. (Syst.), 82: 51-56, figs. 1-9.
- trifoliatus* Marshall, 1908, Trans. Amer. Micros. Soc., 28: 115, pl. 15, figs. 72-74. [Marshall Collection]
- wallensis* Cook, 1954, op. cit., 73: 57-58, pl. 4, figs. 36, 43. [C.N.H.M. Collection]
- wolcottii* Marshall, 1908, op. cit., 28: 118-119, pl. 17, fig. 87, pl. 18, figs. 88-89. [Marshall Collection]

Incertae sedis

The names listed below represent species that cannot be entered in the modern taxonomic system because of the inadequacy of the descriptions. The species are listed in alphabetical order.

Arrhenurus acerformis Marshall, 1924, Trans. Wis. Acad. Sci., 21: 215, pl. 8, figs. 8, 9, 13. [Marshall Collection]

Arrhenurus hirsutus Marshall, op. cit., p. 215, pl. 8, figs. 10-12. [Marshall Collection]

[This and the previous species of *Arrhenurus* are based only on females and cannot be properly entered into the generic system.]

Hydrachna coccinea Haldeman, 1843, Proc. Acad. Nat. Sci. Philadelphia, 1: 196. [Probably Hydryphantidae.]

Hydrachna nebulosa Haldeman, op. cit., p. 196. [Not *Hydrachna*.]

Hydrachna pyriformis Dana and Whelpley, 1836, Amer. Jour. Sci., (1), 30: 358-359, pl. 1, fig. 9. [Probably *Unionicola*.]

Hydrachna scabra Haldeman, 1843, Proc. Acad. Nat. Sci. Philadelphia, 1: 184. [Hydryphantidae?]

Hydrachna triangularis Say, 1821, Jour. Acad. Nat. Sci. Philadelphia, 2: 59. [Probably *Unionicola*.]

Hydrachna tricolor Packard, 1871, Amer. Jour. Sci., (3), 1: 108. [There is no clue to the genus of this species in the description.]

Hydrachna 5-undulata Haldeman, 1843, Proc. Acad. Nat. Sci. Philadelphia, 1: 184. [*Limnesia*?]

Steganaspis arrenuroides Wolcott, 1901, Trans. Amer. Micros. Soc., 22: 105-109, pl. 21, figs. 1-6. [A larval description that cannot be placed in a taxonomic system that is based on adult characters.]

Unionicola humerosa Haldeman, 1842, Zool. Contr., 1, (1), p. 2, pl. 1, fig. 11.

Unionicola lactea Haldeman, 1842, op. cit., p. 1, pl. 1, figs. 6-8.

- Unionicola lugubris* Haldeman, 1842, Zool. Contr., 1, (1), p. 2.
Unionicola oriformis Haldeman, 1842, op. cit., p. 1, pl. 1, figs. 1-5.
Unionicola personata Haldeman, 1842, op. cit., p. 2, pl. 1, fig. 10.
Unionicola proxima Haldeman, 1842, op. cit., p. 2.
Unionicola reticulata Haldeman, 1842, op. cit., p. 3, pl. 1, fig. 9.
Unionicola symmetrica Haldeman, 1842, op. cit., p. 2.
Unionicola unicolor Haldeman, 1842, op. cit., p. 3.

[The preceding nine species are all defined on color differences. I agree with Wolcott (1899, p. 233) that these species are likely to be *U. ypsilophora* Bonz.]

Rejected Records

Records of Old World species from the New World that cannot be verified or properly assigned are listed here.

- Leidy, 1883, Proc. Acad. Nat. Sci. Phila., 35: 44-46. *Atax* [*Unionicola*] *bonzi* Claparède is cited and probably represents an erroneous identification. There is no other record of the species from the New World.
 Crowell, 1952, Jour. Elisha Mitchell Sci. Soc., 68: 191-196, 2 pls. Seven Palearctic species are recorded for the first time from North America. Neither the illustrations nor the text gives significant specific features. I have examined the slides and cannot see specific characters.
Atractides (*Torrenticola*) *anomalus*, op. cit., p. 192.
Aturus intermedius, op. cit., p. 193.
Hygrobatas fluvialis, op. cit., pp. 192-193.
Lebertia natans, op. cit., p. 192.
Megapus (*Atractides*) *walleri*, op. cit., p. 193.
Sperchon longirostris, op. cit., p. 192.
Sperchon squamosus, op. cit., p. 191.
 Bergstrom, 1953, Trans. Amer. Micros. Soc., 72: 157-162. Forty species are listed, four of them recorded from North America for the first time. Many of the specimens on which these records are based have been examined and the technique of slide preparation is such that reliable specific identifications are impossible. I reject all the records but list only the species new to North America.
Eylais wilsoni, op. cit., p. 158.
Piona nodata, op. cit., p. 161.
Piona nodata laminata, op. cit., p. 161.
Piona uncata, op. cit., p. 161.

Additional Type Material in the Marshall Collection

The species listed below were described by Marshall from outside of North America and are represented by type material in the Marshall Collection.

- Arrenurus asiaticus* Marshall, 1919, Trans. Amer. Micros. Soc., 38: 276-277, pl. 29, figs. 8-10—China.
Arrenurus distinctus Marshall, 1919, op. cit., p. 277, pl. 30, figs. 14-16—China.
Arrenurus epimerosus Marshall, 1919, op. cit., pp. 278-279, pl. 31, figs. 25-28—Brazil.

- Arrenurus geei* Marshall, 1921, Trans. Amer. Micros. Soc., 40: 172, pl. 11, figs. 26-29—China.
- Arrenurus habanicus* Marshall, 1927, Trans. Ill. Acad. Sci., 19: 198—Cuba.
- Arrenurus maderius* Marshall, 1919, Trans. Amer. Micros. Soc., 38: 279, pl. 31, figs. 29-32—Brazil.
- Arrenurus merrilli* Marshall, 1919, op. cit., pp. 277-278, pl. 30, figs. 17-18—Brazil.
- Arrenurus pisciscaudapetiolatus* Marshall, 1928, Trans. Wis. Acad. Sci., 23: 605, pl. 15, figs. 20-25—China.
- Arrenurus quadricornicus* Marshall, 1919, Trans. Amer. Micros. Soc., 38: 279-280, pl. 31, figs. 33-37—British Guiana.
- Arrenurus scapulatus* Marshall, 1910, op. cit., 29: 98-99, pl. 1, figs. 2-6—Belgian Congo.
- Arrenurus soochowensis* Marshall, 1921, op. cit., 40: 171, pl. 11, figs. 22-25—China.
- Arrenurus triconicus* Marshall, 1919, op. cit., 38: 278, pl. 30, figs. 19-24—British Guiana.
- Arrenurus valenciis* Marshall, 1919, op. cit., p. 277, pl. 29, figs. 11-13—Venezuela.
- Hydrachna nova* Marshall, 1928, Trans. Wis. Acad. Sci., 23: 601-602, pl. 13, figs. 1-4—China.
- Hydrachna simulans* Marshall, 1928, op. cit., p. 602, pl. 14, figs. 16-18—China.
- Koenikea indistincta* Marshall, 1936, Carnegie Inst. Wash. Pub., no. 457, p. 134, figs. 1-5—Yucatan.
- Limnesia koenikei* var. *asiatica* Marshall, 1928, op. cit., p. 604, pl. 14, figs. 13-15—China.
- Neumania cenotea* Marshall, 1936, Carnegie Inst. Wash. Pub., no. 457, pp. 133-134, figs. 6-8—Yucatan.
- Neumania geei* Marshall, 1928, Trans. Wis. Acad. Sci., 23: 603-604, pl. 14, figs. 10-12—China.
- Piona erratica* Marshall, 1940, Trans. Amer. Micros. Soc., 59: 377-378, pl. 2, figs. 8-11—Argentina.
- Piona marianaensis* Marshall, 1927, Trans. Ill. Acad. Sci., 19: 198—Cuba.
- Piona pearsei* Marshall, 1936, Carnegie Inst. Wash. Pub., no. 457, pp. 134-135, figs. 9-14—Yucatan.
- Xystonotus torrei* Marshall, 1927, Trans. Ill. Acad. Sci., 19: 198-199—Cuba.

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